Upsala, November 19. 1934.
Jernbrogatan 52 B.

MH76 F1

Dear Dr.Heidelberger.

I wish to thank you and your family for all your friendliness to me and my wife here in Upsala. We are so glad of having had the pleasure to make your acquaintance, we do hope that we some time will get the opportunity of seeing you again! And thank you for the card from the ship, I hope you had a fine trip home in better weather than we have had here, I have never seen so much raining here in Upsala as the last 6-8 weeks!

I regret very much that I have not written to you before, but I have had very much to do with the new method for calculating the equilibrium runs, experimenting out the best method for determining the refractive increment in ultraviolet. I have also been very busy with runs on the new centrifuge, first velocity runs and runs for the determination of the cell temperature and later on equilibrium runs by 120 000 r.p.m. corresponding to a centrifugal field of 550 000 times gravity. In this field it is possible to make equilibrium runs on low molecular substances, i.g. NaCl, LiCl, glycocol. I have first in the very last time got time to make the electrophoresis determinations on the hog thyroglobulin. I hope to be through with these determinations in a week. At that time I think it will be possible too to start with the calculations of the equilibrium runs with the $\lambda = 436\ m\mu$. I found it necessary to make another equilibrium run after your depart. When I got the equilibrium runs calculated with the new method, the values showed a rather strong drift (this was to be expected from the velocity runs, where you always had some faster and some slower sedimentating substances than

the main part). But the two equilibrium runs were both made with the same start concentration, so there could~~n't~~ possibly be a concentration effect responsible for this. Therefore I thought it necessary to make a new equilibrium run with two different concentrations. These gave nearly the same values for the same distance from the axis of rotation nearly independent of what the concentration was. That means that it is no concentration effect but that it is due to the material not being monodisperse. The main part gives a molecular weight of approximately ½ million.

As soon as I get the new values calculated I shall send them to you together with all the calculations, I hope to be able to do that within a fortnight.

Please remember me to mrs.Heidelberger and Charlie and also to miss Tachau,

yours sincerely
Kai O. Pedersen.

P.S. Professor Svedberg[x] has just to-day received a letter from dr. Robert H.Hamilton of which he has asked me to send you the enclosed copy. I don't remember, if you made any arrangements to get rid of the fat. Sometimes, f.inst. for the serum proteins, one finds the same sedimentation constants for the fatfree as for the fat containing substances, in other cases the fatfree substances seem to be changed quite a bit (denatured, not homogeneous). If you think it of any value I should be glad to make determination on the fatfree substance, in case professor Svedberg agrees, but on the other hand it might give rise to quite a new investigation. - I have just a few days ago started dialysing the crude extract you left for some of the next electrophoresis experiments and for some of the experiments for the refractive increment.

[x] Professor Svedberg is just sending an answer to dr. Hamilton in which he refers to you.